

Claims:

1 1. A launch and recovery system for unmanned underwater
2 vehicles (UUV), comprising:

3 a watercraft capable of navigating on a water surface,
4 said watercraft having a stern endwall movable between a
5 first position and a second position, said stern endwall
6 being substantially vertical in said first position and being
7 angled downward and away from said watercraft to define a
8 ramp that extends toward the water surface in said second
9 position;

10 a storage platform mounted on said watercraft for
11 defining a storage area for at least one UUV, said storage
12 platform having a forward end and an aft end wherein said aft
13 end terminates at said stern endwall;

14 an arm pivotally mounted to said watercraft at a
15 position forward of said storage platform, said arm having an
16 outboard end that can be extended to positions aft of said
17 watercraft and on either side thereof based on a pivot
18 position of said arm, said arm being retractable such that
19 said outboard end is positionable over said storage platform;

20 capture means, mounted to said outboard end of said
21 arm, for capturing a UUV that maneuvers thereto; and

22 homing means coupled to said arm for transmitting a
23 homing signal through the water for use by the UUV in

24 maneuvering to said capture means.

1 2. A launch and recovery system as in claim 1 wherein said
2 storage platform comprises a bed of freely-rotating rollers
3 that support each said UUV thereon.

1 3. A launch and recovery system as in claim 1 wherein said
2 storage platform comprises a bed of low-friction slides that
3 support each said UUV thereon.

1 4. A launch and recovery system as in claim 1 wherein said
2 storage platform comprises a bed of motorized rollers that
3 support each said UUV thereon.

1 5. A launch and recovery system as in claim 4 further
2 comprising means coupled to said motorized rollers for
3 selective operation thereof wherein each said UUV can be
4 manipulated on said storage platform.

1 6. A launch and recovery system as in claim 1 wherein said
2 capture means comprises a loop for cooperation with a hook
3 mounted on each said UUV.

1 7. A launch and recovery system as in claim 1 wherein said

2 homing means is an acoustic-based system that generates an
3 acoustic signal as said homing signal.

1 8. A launch and recovery system as in claim 1 wherein said
2 homing means is an optical-based system that generates an
3 optical signal as said homing signal.

1 9. A launch and recovery system for unmanned underwater
2 vehicles (UUV), comprising:

3 a watercraft capable of navigating on a water surface,
4 said watercraft having a stern endwall pivotable about a
5 horizontal axis thereof between a first position and a second
6 position, said stern endwall being substantially vertical in
7 said first position and being angled downward and away from
8 said watercraft to define a ramp that extends toward the
9 water surface in said second position;

10 a storage platform mounted on said watercraft for
11 defining a storage area for at least one UUV, said storage
12 platform having a forward end and an aft end wherein said aft
13 end terminates at said horizontal axis;

14 a telescopic arm pivotally mounted to said watercraft
15 at a position forward of said storage platform, said
16 telescopic arm having an outboard end that can be extended to
17 positions aft of said watercraft and on either side thereof
18 based on a pivot position of said telescopic arm, said
19 telescopic arm being retractable such that said outboard end
20 is positionable over said storage platform from said
21 positions aft of said watercraft;

22 capture means, mounted to said outboard end of said
23 telescopic arm, for capturing a UUV that maneuvers thereto;
24 and

25 homing means coupled to said telescopic arm for
26 transmitting a homing signal through the water for use by the
27 UUV in maneuvering to said capture means.

1 10. A launch and recovery system as in claim 9 wherein said
2 storage platform comprises a bed of freely-rotating rollers
3 that support each said UUV thereon.

1 11. A launch and recovery system as in claim 9 wherein said
2 storage platform comprises a bed of low-friction slides that
3 support each said UUV thereon.

1 12. A launch and recovery system as in claim 9 wherein said
2 storage platform comprises a bed of motorized rollers that
3 support each said UUV thereon.

1 13. A launch and recovery system as in claim 12 further
2 comprising means coupled to said motorized rollers for
3 selective operation thereof wherein each said UUV can be
4 manipulated on said storage platform.

1 14. A launch and recovery system as in claim 9 wherein said
2 capture means comprises a loop for cooperation with a hook
3 mounted on each said UUV.

1 15. A launch and recovery system as in claim 9 wherein said
2 homing means is an acoustic-based system that generates an
3 acoustic signal as said homing signal.

1 16. A launch and recovery system as in claim 9 wherein said
2 homing means is an optical-based system that generates an
3 optical signal as said homing signal.

1 17. A launch and recovery system for unmanned underwater
2 vehicles (UUV), comprising:

3 a watercraft capable of navigating on a water surface,
4 said watercraft having a stern endwall movable between a
5 first position and a second position, said stern endwall
6 being substantially vertical in said first position and being
7 angled downward and away from said watercraft to define a
8 ramp that extends toward the water surface in said second
9 position;

10 position determination means mounted on said watercraft
11 for determining a global position thereof on said water
12 surface;

13 communication means mounted on said watercraft for
14 transmitting a signal indicative of said global position
15 through the water;

16 a storage platform mounted on said watercraft for
17 defining a storage area for at least one UUV, said storage
18 platform having a forward end and an aft end wherein said aft
19 end terminates at said stern endwall;

20 an arm pivotally mounted to said watercraft at a
21 position forward of said storage platform, said arm having an
22 outboard end that can be extended to positions aft of said
23 watercraft and on either side thereof based on a pivot
24 position of said arm, said arm being retractable such that

25 said outboard end is positionable over said storage platform;
26 capture means, mounted to said outboard end of said
27 arm, for capturing a UUV that maneuvers thereto; and
28 homing means coupled to said arm for transmitting a
29 homing signal through the water for use by the UUV in
30 maneuvering to said capture means.

1 18. A launch and recovery system as in claim 17 wherein said
2 storage platform comprises a bed of freely-rotating rollers
3 that support each said UUV thereon.

1 19. A launch and recovery system as in claim 17 wherein said
2 storage platform comprises a bed of low-friction slides that
3 support each said UUV thereon.

1 20. A launch and recovery system as in claim 17 wherein said
2 storage platform comprises a bed of motorized rollers that
3 support each said UUV thereon.

1 21. A launch and recovery system as in claim 20 further
2 comprising means coupled to said motorized rollers for
3 selective operation thereof wherein each said UUV can be
4 manipulated on said storage platform.

1 22. A launch and recovery system as in claim 17 wherein said
2 capture means comprises a loop for cooperation with a hook
3 mounted on each said UUV.

1 23. A launch and recovery system as in claim 17 wherein said
2 homing means is an acoustic-based system that generates an
3 acoustic signal as said homing signal.

1 24. A launch and recovery system as in claim 17 wherein said
2 homing means is an optical-based system that generates an
3 optical signal as said homing signal.